



SEMIPONT[®] 2

Controllable Bridge Rectifiers

SKDH 100

Features

- Fully controlled three phase bridge rectifier
- Robust plastic case with screw terminals
- Large, isolated base plate
- Blocking voltage to 1400V
- High surge currents
- Easy chassis mounting
- UL recognized, file no. E 63 532

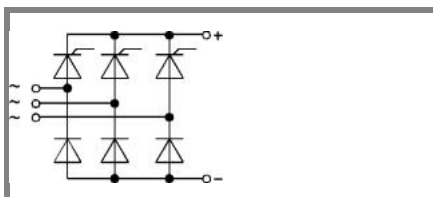
Typical Applications

- For DC drives with a fixed direction of rotation
- Controlled field rectifiers for DC motors
- Controlled battery charger rectifiers

1) Painted metal shield of minimum 250 x 250 x 1 mm: $R_{th(c-a)} = 1,8 \text{ K/W}$

V_{RSM} V	V_{RRM}, V_{DRM} V	$I_D = 100 \text{ A (full conduction)}$ ($T_c = 84 \text{ °C}$)
800	800	SKDH 100/08
1200	1200	SKDH 100/12
1400	1400	SKDH 100/14

Symbol	Conditions	Values	Units
I_D	$T_c = 85 \text{ °C}$	98	A
	$T_a = 45 \text{ °C; chassis } ^1)$	20	A
	$T_a = 45 \text{ °C; P13A/125}$	25	A
	$T_a = 45 \text{ °C; P1A/120}$	45	A
I_{TSM}, I_{FSM}	$T_{vj} = 25 \text{ °C; } 10 \text{ ms}$	1000	A
	$T_{vj} = 125 \text{ °C; } 10 \text{ ms}$	850	A
i^2t	$T_{vj} = 25 \text{ °C; } 8,3 \dots 10 \text{ ms}$	5000	A ² s
	$T_{vj} = 125 \text{ °C; } 8,3 \dots 10 \text{ ms}$	3600	A ² s
V_T	$T_{vj} = 25 \text{ °C; } I_T = 200 \text{ A}$	max. 1,95	V
$V_{T(TO)}$	$T_{vj} = 125 \text{ °C;}$	max. 1	V
r_T	$T_{vj} = 125 \text{ °C}$	max. 4,5	mΩ
I_{DD}, I_{RD}	$T_{vj} = 125 \text{ °C; } V_{DD} = V_{DRM}; V_{RD} = V_{RRM}$	max. 15	mA
t_{gd}	$T_{vj} = 25 \text{ °C; } I_G = 1 \text{ A; } di_G/dt = 1 \text{ A/}\mu\text{s}$	1	μs
t_{gr}	$V_D = 0,67 \cdot V_{DRM}$	1	μs
$(dv/dt)_{cr}$	$T_{vj} = 125 \text{ °C}$	max. 500	V/μs
$(di/dt)_{cr}$	$T_{vj} = 125 \text{ °C; } f = 50 \text{ Hz}$	max. 50	A/μs
t_q	$T_{vj} = 125 \text{ °C; typ.}$	80	μs
I_H	$T_{vj} = 25 \text{ °C; typ. / max.}$	100 / 200	mA
I_L	$T_{vj} = 25 \text{ °C; } R_G = 33 \text{ }\Omega$	250 / 400	mA
V_{GT}	$T_{vj} = 25 \text{ °C; d.c.}$	min. 3	V
I_{GT}	$T_{vj} = 25 \text{ °C; d.c.}$	min. 150	mA
V_{GD}	$T_{vj} = 125 \text{ °C; d.c.}$	max. 0,25	V
I_{GD}	$T_{vj} = 125 \text{ °C; d.c.}$	max. 5	mA
$R_{th(f-c)}$	per thyristor / diode	0,85	K/W
	total	0,141	K/W
$R_{th(c-s)}$	total	0,05	K/W
T_{vj}		- 40 ... + 125	°C
T_{stg}		- 40 ... + 125	°C
V_{isol}	a. c. 50 Hz; r.m.s.; 1 s / 1 min.	3600 (3000)	V
M_s	to heatsink	5	Nm
M_t	to terminals	3	Nm
m		165	g
Case	SKDH	G 53	



SKDH

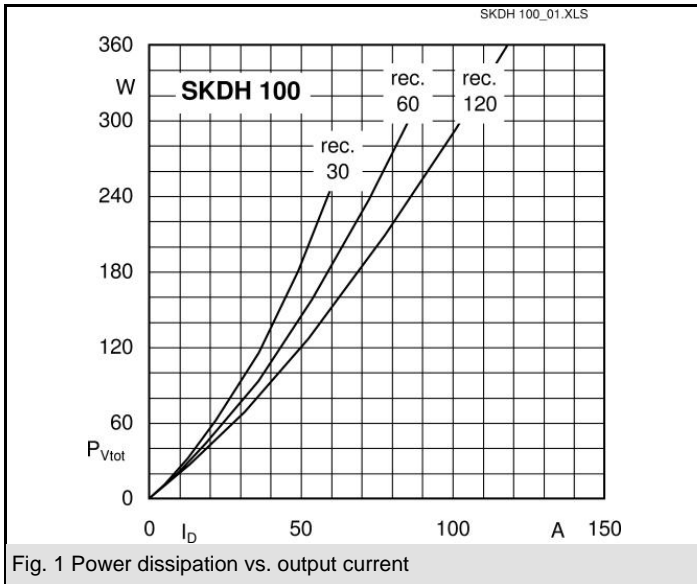


Fig. 1 Power dissipation vs. output current

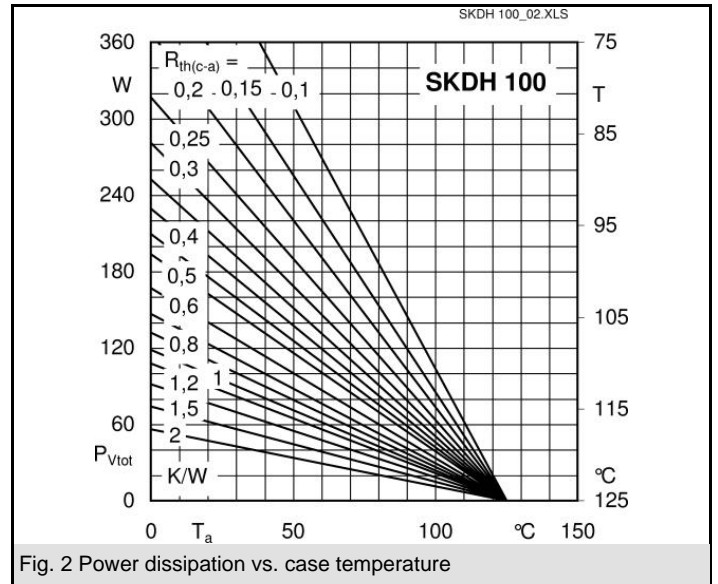


Fig. 2 Power dissipation vs. case temperature

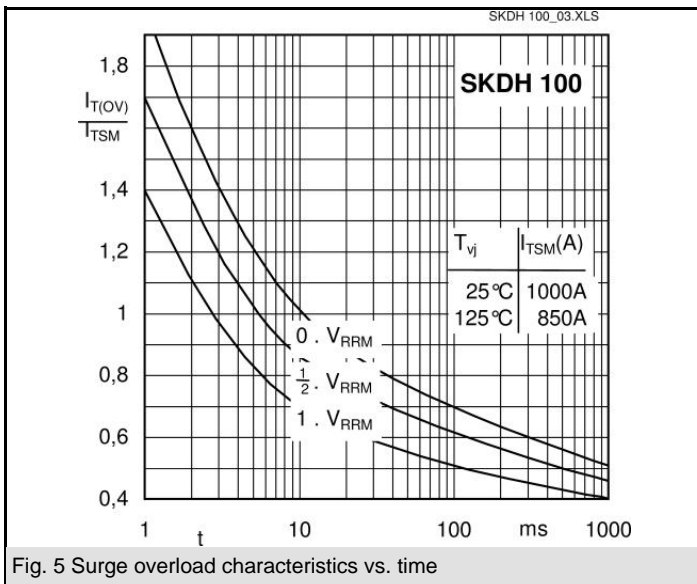


Fig. 5 Surge overload characteristics vs. time

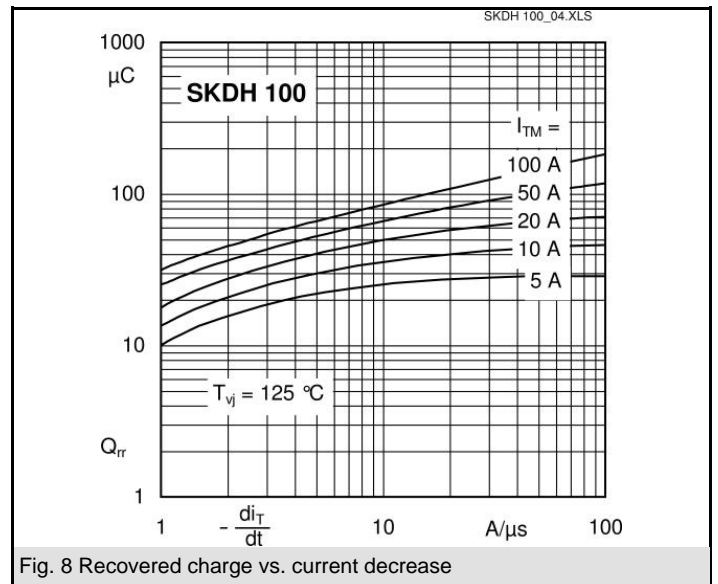


Fig. 8 Recovered charge vs. current decrease

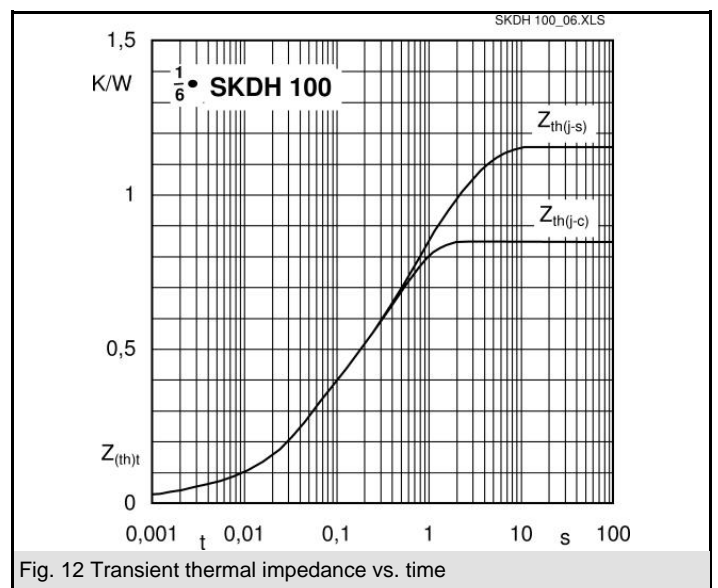


Fig. 12 Transient thermal impedance vs. time

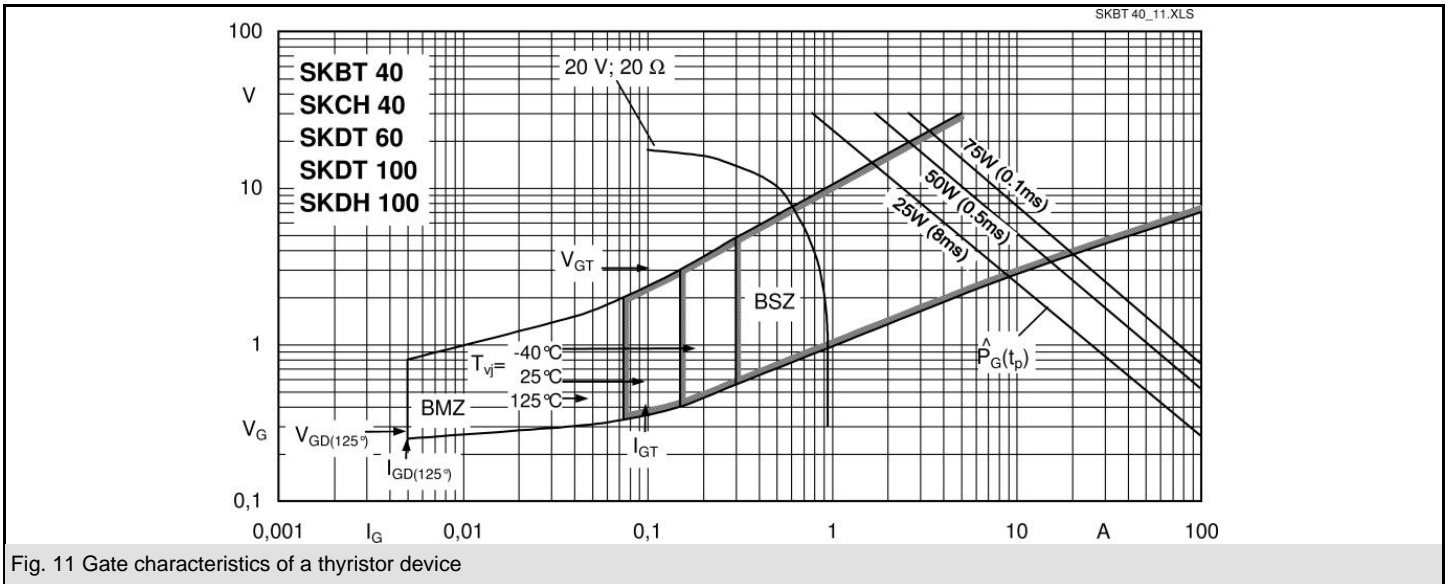
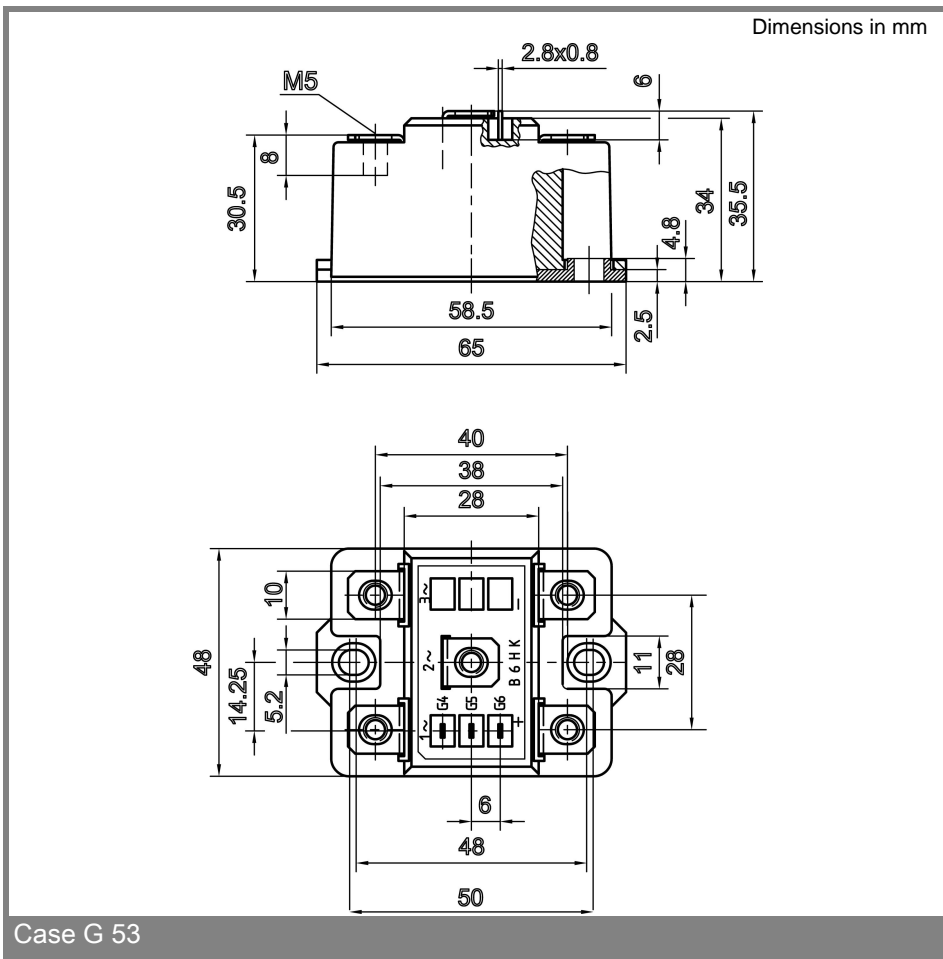


Fig. 11 Gate characteristics of a thyristor device



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